

Abstract

Process for the for the production of precipitated silica from olivine including the following steps:

- providing olivine particles with a particle size preferably below 1 mm in diameter,
- preferably mixing olivine and water to form an olivine/water slurry,
- mixing the olivine/water slurry with hydrochloric acid (HCl), preferably at a concentration at 18 wt% or above, and at a temperature preferably between 50 – 130 °C, and reacting for a period of time, preferably between 20 – 360 minutes,
- removal of coarse mineral impurities (sand product),
- separation of precipitated silica from mother solution,
- mechanical treatment of the separated precipitated silica and optionally some water to obtain a slurry.
- preparation of a low viscosity slurry by adding sodium aluminate or another suitable aluminate, preferably to 100 – 6000 p.p.m., and adjusting the pH, preferably to values between 4 – 9
- ageing at a temperature between 50 – 150 °C according to product requirements
- dispersion of silica slurry
- removal of fine mineral impurities (sand product)
- drying of the silica

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